

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently) amended) An isolated nucleic acid comprising a sequence encoding a polypeptide having galacturonosyltransferase (GALAT1) activity, wherein the polypeptide comprises an amino acid sequence identical to or comprises a sequence at least 50% amino acid sequence similarity with the sequence set forth in SEQ ID NO:2 and wherein the galacturonosyltransferase catalyzes transfer of galacturonosyl residues to an oligomer of galacturonic acid residues, and a transcription regulatory sequence, wherein said sequence encoding the ~~GALAT~~ polypeptide and the transcription regulatory sequence are operably linked, and wherein said sequences are not associated together in nature.
- 2-3. Cancelled
4. (Previously amended) The nucleic acid of claim 1 wherein the polypeptide comprises the amino acid sequence as set forth in SEQ ID NO: 2.
5. (Previously amended) The nucleic acid of claim 4 wherein the nucleic acid comprises SEQ ID NO: 1.
6. (Withdrawn, Currently amended,) An isolated polypeptide having galacturonosyltransferase GalAT activity wherein the polypeptide or the fragment has at least ~~approximately~~ 50% amino acid sequence similarity with the corresponding amino acid sequence as shown in SEQ ID NO: 2.

7. (Withdrawn; currently amended) The polypeptide ~~or the fragment~~ of claim 6 which comprises the amino acid sequence selected from the group consisting of the sequences as set forth in SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28? this is GAUT 14], and 30, ~~42, 44, 48, and 50~~, or the corresponding sequence thereto.
8. (Withdrawn, currently amended) The polypeptide ~~or the fragment~~ of claim 7 which comprises the amino acid sequence as set forth in SEQ ID NO: 2 or the corresponding sequence thereto.
9. (Withdrawn, currently amended) The polypeptide ~~or the fragment~~ of claim 8 wherein the amino acid sequence is encoded by the nucleic acid as set forth in SEQ ID NO: 1.
10. (Withdrawn, currently amended) An antibody which specifically recognizes the polypeptide ~~or the fragment~~ of claim 7.
11. (Previously amended) An expression vector comprising the nucleic acid of claim 1, wherein the transcription regulatory sequence is a promoter that functions in plants.
12. Cancelled.
13. (Previously amended) A transgenic plant which has been transformed with the expression vector of claim 11.
- 14-15. Canceled
16. (Previously amended) Progeny of the transgenic plant of claim 13, wherein said progeny comprises the nucleic acid of claim 1.

17-19. Canceled

20. (Withdrawn, previously amended,) A method of preparing a polymer comprising contacting a galacturonic acid and a polymer with a GALAT protein under conditions suitable to form at least one covalent linkage between the galacturonic acid and the polymer.
21. (Withdrawn) The method of claim 20 wherein said polymer is selected from the group consisting of homogalacturonan, rhamnogalacturonan I, rhamnogalacturonan II, xylogalacturonan, apiogalacturonan or other galacturonic containing polymer.
22. (Withdrawn) The method of claim 21, wherein said polymer is homogalacturonan.
23. (Withdrawn, previously amended,) The method of claim 20 wherein the GALAT protein comprises the amino acid sequence as set forth in SEQ ID NO: 2.

24-25. Cancelled.

26. (Previously presented) The nucleic acid of claim 1 wherein the sequence encoding the polypeptide having GALAT1 activity is at least 90% identical to SEQ ID NO:1.